

# The Case of Asymptomatic Primary Actinomycosis of the Greater Omentum in the Patient with Intrauterine Contraceptive Device

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## ABSTRACT

*This paper describes a case of asymptomatic multifocal actinomycosis of the greater omentum which was detected accidentally in a patient who was suspected of uterus myoma. The patient was a 40 year old woman who had a copper intrauterine contraceptive device (IUCD) for three years. After the gynecological examination and pelvic ultrasound she was diagnosed with sub serous myoma of uterus. Since she did not give a birth it was suggested to have myoma enucleating. However during the surgery a dermoid teratoma of the right ovary was detected so it was removed together with tumor and there were two thickenings on the greater omentum, suspicious of inflammation, whereas one grew together with the front abdominal wall. Due to these conditions, she had partial omentectomy done and omentum was sent for path histological examination. The path histological examination confirmed it to be actinomycosis. The patient had an intensive antibiotic therapy prescribed (Penicillin) in order to prevent a disease relapse because we could not be sure whether the remaining part of omentum was affected by microscopic actinomycosis.*

**Key words:** actinomycosis, greater omentum, intrauterine contraceptive device, dermoid cyst

## Introduction

Abdominal actinomycosis is very rare, chronic granulose infection caused by actinomycosis israeli, gram positive anaerobe bacterium<sup>1</sup> and it can occur very rarely as a primary infection and on the greater omentum<sup>2</sup>.

This condition is a consequence of inflamed or traumatic lesion of gastrointestinal tract mucosa, immune suppression and it is a known as hematogenous infection<sup>3</sup>. Women might be infected with actinomyces in the case when they have IUCD for longer period of time<sup>4</sup>.

It is rather difficult to diagnose it and very often it is detected at histological examination after a surgery<sup>1</sup>.

Actinomycosis is treated with long high doses antibiotic therapy (Penicillin)<sup>1</sup>.

## Case Report

The patient, 40 year old woman, no childbirth, one intentional abortion, three years with IUCD. Family his-

tory: nobody suffered from any serious diseases and neither did she.

The patient came for a routine check up on 25 Sept 2003 and the gynecological examination was: outer genitals normal, vagina medium wide and epidermal. Cervix was conical and epidermal with visible threads of IUCD. The tumor of 10 cm with equal surface was palpable in pelvis, it was mobile and pain free. The uterus and adnexal could not be differentiated from tumor. Erythrocyte sedimentation rate (ESR): 33, CA 125=37, C-reactive protein (CRP), full blood count (FBC) and urine within normal values. The Pap smear showed no malignancy and cytological smear detected contamination of IUCD with actinomycosis. (Figure 1.) Ultrasound of pelvis showed: uterus in anteversion-flexion (AVF1), anteroposterior (AP) 34 mm, fundus-cervix (FC) 79 mm with a strong echo of IUCD in hollow. In front of and left of uterus there was a solid tumor of 68x95 mm, of rich

neovascularization, resistant index (RI) 0.4 (suspicious of sub serous uterus myoma).

Due to the pelvic tumor a laparotomy was suggested and all preoperative examinations were within normal values. The laparotomy according to Pfannenstiel was performed on 28 Oct 2003. Surgical finding was: uterus and left adnex normal, right ovary turned into a tumor of 12 cm, equal surface, elastic consistency, with no healthy ovary tissue. In Douglas hollow there was 100 mL of seroseangviolet liquid that was aspirated and sent for cytological examination which diagnosed mesothelium cells and blood, but no malignancy. The greater omentum was changed due to inflammation, thickened, three cm in diameter and grew together with parietal peritoneum of front abdominal wall, right above the bladder. There was another thickening 10 cm away on the greater omentum which did not grow together to parietal peritoneum or abdominal organs. Once when the greater omentum was sharply separated from parietal peritoneum which it grew together to, ovariectomy was performed on the right side and partial omentectomy. The tissue was sent for path histological examination during the surgery and

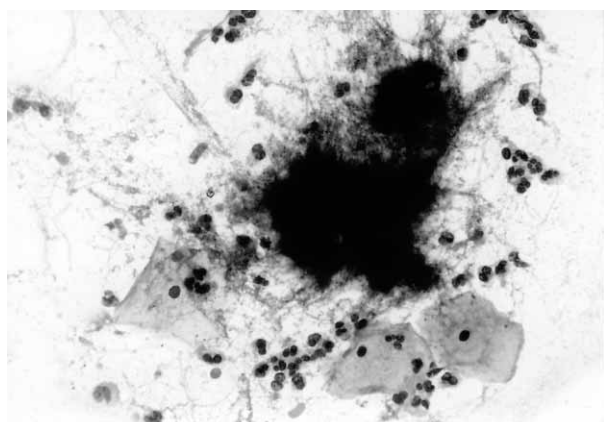


Fig. 1. Bacteria morphologically consistent with *Actinomyces* in Pap smear show »cotton ball« appearance of tangled clumps of filamentous organisms. (Papanicolaou's staining  $\times 400$ ).

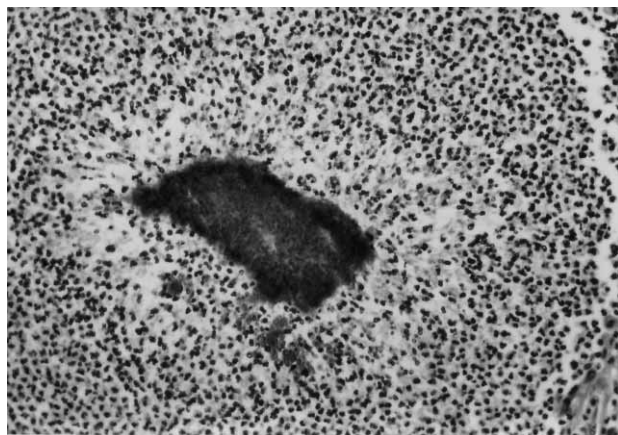


Fig. 2. *Actinomyces* colony of greater omentum. (Hematoxylin-eosin staining,  $\times 320$ ).

the result was: dermoid teratoma ovary cyst as it was confirmed with the final path histological diagnosis together with actinomycosis omenti majors – big parts could be noticed affected by necrosis infiltrated with rich inflamed infiltrates of neutrophilia, histiocytes, lymphocytes and cell plasma and sporadically there were accumulated microorganisms (*Actinomyces* colonies). (Figure 2.) *Actinomyces* colonies were Gram positive and hematoxylin-eosin were coloured basophile.

The patient recovered without complications after the surgery.

After the surgery the patient had her IUCD removed and the smear was sent for microbiological examination. *Citrobacter diversus* was isolated but not actinomycosis. Since the patient's diagnosis was actinomycosis of the greater omentum she was given Penicillin for four weeks. During first two weeks she was given crystal Penicillin of 4,000,000 j. (24,000,000j. per day) every four hours. When she left the hospital she took Benzatin-fenoksimetil-penicillin pills of 1,500 mg every 6 hours for 7 days and then every 8 hours for another 7 days.

The patient has been examined for 44 months. The local gynecological finding was normal: SE; CRP; CBC and urine. The pelvic and abdominal ultrasound was normal and the patient was well.

## Discussion

The symptoms of advanced actinomycosis are rather atypical and the disease usually has symptoms of tumor which should be surgically treated. Other symptoms of abdominal actinomycosis that patients complain of are abdominal pain and loss of weight<sup>4</sup>. The medical examination confirms the abdominal pain, tumor, vaginal secretion, high fever and in a lot of cases there is IUCD<sup>1,4</sup>. The blood analysis shows anemia and leukocytes<sup>1</sup>. If the diseases is caused by long usage of IUCD (more than 4 years), it has been noticed that once it is removed the disease occurs<sup>1,4</sup>.

In an early disease phase patient does not have any symptoms and examination would not find anything (except IUCD) that might suggest inflammation.

Our patient did not have any symptoms before the surgery that might have suggested that she had actinomycosis, although she used IUCD as the contraceptive method, she had it only for three years and only after the cytological examination of cervix smear because of suspected malignancy actinomycosis was detected. Since it was believed that she had sub serous myoma of uterus she underwent surgery. During the surgery ovary teratoma of 12 cm was removed and there was no healthy ovary tissue, but oviduct was left because of the patients wish to have children. There were light two thickenings on the greater omentum discovered and due to fibroids covering suspected of inflammation etiology, but they were not macroscopically suspected of actinomycosis because there were no atypical tissue reactions, nor pus cavities and malignancy. However, the similar macro-

scopic finding is for often caused by other inflammatory agents than by actinomycosis. There was a partial resection of the greater omentum done and the material was sent for path histological examination.

It was rather difficult to diagnose actinomycosis histological for two reasons. Firstly the diagnosis of a path histological condition primarily caused by actinomycosis is difficult due to widely spread microorganisms all around we and therefore they can be present as are other commensalisms in the case of an inflammation<sup>5</sup>. It is very often that we fail to diagnose the right microorganisms. The right diagnosis in the case of actinomycosis depends on two coloring methods (hematoxylin-eosin according to Gram) because it is difficult to differentiate semi granulations from the real ones caused by actinomycosis<sup>6</sup>. In order to identify *A. israeli* it is recommended to use immunofluorescent examination<sup>7</sup>.

Our patient developed the greater omentum infection probably because of IUCD in vagina which was colonized with actinomyces commensally<sup>5</sup>. However, the microbiological examination of IUCD failed to isolate actinomyces, though other authors have managed to isolate actinomyces in patients who had abdominal actinomycosis and IUCD as contraceptive method<sup>1</sup>. It is very likely that IUCD smear was not taken appropriately. The histological diagnosis was confirmed with coloring methods (hematoxylin-eosin staining according to Gram) and the finding of Actinomyces colonies. In order to prevent recidivism of actinomycosis that might be caused by microscopically inflammatory focuses on the remaining omentum, the patient took high doses of Penicillin for four weeks. The patient was symptom free and without any signs of disease recidivism on the control after 44 months.

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## SLUČAJ ASIMPTOMATSKE PRIMARNE AKTINOMIKOZE VELIKOG OMENTUMA U PACIJENTICE S INTRAUTERINIM KONTRACEPCIJSKIM ULOŠKOM

## SAŽETAK

Prikazan je slučaj asimptomatske multifokalne aktinomikoze velikog omentuma koja je otkrivena slučajno u pacijentice operirane zbog sumnje na miom maternice. Radi se o 40-godišnjoj ženi koja je imala intrauterini kontracepcijski uložak (IUCD) unazad 3 godine. Nakon ginekološkog i UZ pregleda male zdjelice postavljena je sumnja na submukozni miom maternice. Budući da pacijentica nije rodila preporuča se enukleacija miomatnog čvora. Prilikom operacije nađe se cistični dermoidni teratom desnog jajnika te se odstrani desni jajnik s tumorom. Za vrijeme operacije primjećena su na velikom omentumu dva zadebljanja sumnjiva na upalnu etiologiju od kojih je jedno priraslo uz prednji trbušni zid. Radi uočenih promjena učini se parcijalna omentektomija i omentum također pošalje na histološki pregled. Tek nakon histološkog pregleda omentuma postavljena je dijagnoza aktinomikoze. U pacijentice je poslije operacije provedena antibiotska terapija (Penicillin) da bi se izbjegao recidiv bolesti budući da nismo bili sigurni jesu li u preostalom djelu omentuma postojala mikroskopska žarišta aktinomikoze.